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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Khamir Girish Joshi et al

Serial Number: 10/711,487

Filed: September 21, 2004

For: Distributed Buoyancy Subsea Pipeline Apparatus and Method

Group Art Unit: 3672

Examiner: Sunil Singh

Confirmation Number: 5486

Attorney Docket Number: 04-11

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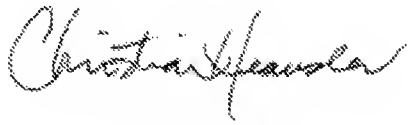
I hereby certify that this correspondence is being submitted through the United Patent and Trademark Office's electronic filing system to the attention of the Examiner noted above on the following date: July 9, 2008



Christian Heausler

AMENDMENT AND RESPONSE

In response to the Final Office Action dated May 19, 2008, having a shortened statutory period for response set to expire on July 19, 2008, Applicants respectfully request entry and consideration of the following amendments and remarks:

Amendments to the Claims are reflected in the listing of claims which begin on page 2 of this paper.

Remarks begin on page 5 of this paper.

AMENDMENTS TO THE CLAIMS

For the Examiner's convenience, all pending claims are set forth below in the following Listing of Claims, and have been amended as noted:

Listing of Claims:

Claims 1-57 (Canceled)

58) (Previously Presented and Currently Amended) An apparatus to traverse a seabed topographic feature, comprising:

a subsea pipeline constructed to carry fluids from a first location across the topographic feature to a second location; wherein:

the topographic feature is selected from the group consisting of subsea basins, domes, valleys, cliffs, canyons, escarpments and combinations thereof;

said pipeline comprising at least one distributed buoyancy region;

said pipeline comprising a first unbuoyed pipeline section extending from said first location on a sea floor to said distributed buoyancy region and a second unbuoyed pipeline section extending from said distributed buoyancy region to said second location on a sea floor; and

said distributed buoyancy region comprising two or more spatially arranged discrete buoyancy solutions directly attached to said distributed buoyancy region ~~disposed thereon~~ to create a positively buoyant inverse catenary section connecting said first and said second pipeline sections in fluid communication; and

a first flexure control device at said first location to reduce bending stress and strain in said first unbuoyed pipeline section.

59) (Previously Presented) The apparatus of claim 58 wherein the buoyancy solution

comprises one or more buoyancy-providing modules disposed along a length of said pipeline.

60) (Previously Presented) The apparatus of claim 58 wherein the buoyancy solution comprises a continuous coating of buoyant material.

61) (Previously Presented) The apparatus of claim 58 further comprising a tether system to retain said pipeline in position and to resist forces of undersea currents.

62) (Previously Presented) The apparatus of claim 58 wherein said first and said second pipeline sections are negatively buoyant.

63) (Canceled)

64) (Previously Presented) The apparatus of claim 58 wherein said first flexure control device is located proximate to a cliff edge of the topographic feature.

65) (Previously Presented) The apparatus of claim 58 wherein said first flexure control device is located distant to a cliff edge of the topographic feature.

66) (Previously Presented and Currently Amended) A pipeline for traversing a topographic ~~seabed~~ feature, comprising:

a first unbuoyed section located subsea and extending from a first location on the seabed;

a second unbuoyed section located subsea and extending from a second location on the seabed; and

at least one buoyancy section disposed between the first and second unbuoyed sections, the buoyancy section comprising two or more spatially arranged buoyancy solutions ~~disposed about~~ directly attached to an outer diameter thereof, wherein the first and second unbuoyed sections are in fluid communication with one another via the buoyancy section, and wherein the at least one buoyancy section traverses the topographic feature.

67) (Previously Presented) The pipeline of claim 66, wherein each buoyancy solution comprises one or more discrete buoyancy-providing modules.

68) (Previously Presented) The pipeline of claim 67, wherein the buoyancy-providing module is a buoy.

69) (Previously Presented) The pipeline of claim 67, wherein the buoyancy-providing module is a tethered buoy.

70) (Previously Presented) The pipeline of claim 66, wherein each buoyancy solution is a buoyant coating.

71) (Previously Presented and Currently Amended) The pipeline of claim 66, wherein the first and second locations are located on opposing sides of [[a]] <u>the</u> topographic feature on the seabed, wherein the topographic feature comprises one or more subsea basins, domes, valleys, cliffs, canyons, escarpments, or combinations thereof.

72) (Previously Presented) The pipeline of claim 67, wherein the discrete buoyancy-providing module is a buoyant coating, buoy, or combination thereof.

Applicant believes that no new matter has been added with these amendments.

REMARKS

This reply is intended as a full and complete response to the Final Office Action dated May 19, 2008.

Claims 58, 66, and 71 are currently amended. Claims 58 and 66 are amended to more clearly recite implicit aspects of the claimed subject matter. Claim 71 is amended to correct matters of form

Claims 58-62 and 64-72 are currently pending and are in condition for allowance.

Entry of the foregoing amendment and reconsideration of the claims is respectfully requested.

Claim Rejections -- 35 U.S.C. § 102

The Office Action rejected Claims 66-68, 71, and 72 35 U.S.C. § 102(b) as being anticipated by *Richmond* (U.S. Patent No. 5,582,252).

Applicant has amended Claim 66, thereby obviating the rejection. *Richmond* makes no mention of laying a pipeline across a topographic feature. Therefore, *Richmond* does not teach, show, or suggest at least one buoyancy section disposed between the first and second unbuoyed sections, wherein the at least one buoyancy section traverses the topographic feature, as required in Claim 66 as amended, and those dependent therefrom. Withdrawal of the rejection and allowance of the claims is respectfully requested.

The Office Action rejected Claims 66-69, 71, and 72 stand rejected under 35 U.S.C. § 102(a) as being anticipated by *Pollack* (WO 2004/068014).

Applicant has amended Claim 66, obviating the rejection. *Pollack* discloses that a "bridging duct section may comprise a supporting frame 25 along which a bridging duct 26 is

supported." *See Pollack* p. 3, line 33 to p. 4, line 1. Furthermore, *Pollack* discloses that the "frame 25 may comprise buoyancy members, such as to provide neutral buoyancy to bridging duct section 6." *See Pollack* p. 4, line 1. The frame 25 is not the bridging duct section, and *Pollack* makes no mention as to the number, type, location, or spatial arrangement of the "buoyancy members" on the frame 25. Therefore, Applicant believes that *Pollack* does not teach, show, or suggest a buoyancy section having two or more spatially arranged buoyancy solutions directly attached to an outer diameter thereof. Withdrawal of the rejection and allowance of the claims is respectfully requested.

The Office Action rejected Claims 58-59, 61-62, and 64-65 under 25 U.S.C. §102(a) as being anticipated by *Pollack*.

Applicant has amended Claim 58, thereby obviating the rejection. As noted above, Applicant believes that *Pollack* does not teach, show, or suggest a pipeline having at least one distributed buoyancy region that has two or more spatially arranged discrete buoyancy solutions directly attached to the distributed buoyancy region, as required in Claim 58 as amended, and those dependent therefrom. Withdrawal of the rejection and allowance of the claims is respectfully requested.

Claim Rejections – 35 U.S.C. § 103

The Office Action rejected Claim 69 under 35 U.S.C. § 103(a) as being unpatentable over *Richmond*. The Office Action states, "*Richmond* discloses the invention substantially as claimed. However, Richmond et al. is silent about buoy (26) being tethered." The Office Action then states that "it would have been considered obvious to one or ordinary skill in the art to modify Richmond et al. to make his buoys tethered buoys since such a modification is a design choice."

Applicant respectfully traverses the rejection. As dependent Claim 69 includes all the limitations of Claim 66, Applicant believes that Claim 69 is allowable for at least the same

reasons discussed above. Withdrawal of the rejection and allowance of the claim is respectfully requested.

Furthermore, the Examiner correctly notes that *Richmond* does not teach, show, or suggest a buoyancy-providing module that is a tethered buoy. The Examiner has merely concluded that such modification "would have been considered obvious to one of ordinary skill in the art" without any evidence or teachings from the prior art to suggest such modification. Insofar as the record shows, the only teaching or suggestion to have a buoyancy-providing module that is a buoy as required in Claim 69 has been gleaned from the Applicant's own specification. Therefore, the Examiner's assertion of obviousness is merely an unsupported legal conclusion based on impermissible hindsight. Withdrawal of the rejection and allowance of the claim is respectfully requested.

The Office Action rejected Claim 70 under 35 U.S.C. § 103(a) as being unpatentable over *Richmond* in view of *Moses* (U.S. Patent No. 5,615,977).

Applicant respectfully traverses the rejection. *Richmond* has been discussed and distinguished above. *Moses* does nothing to remedy the deficiencies of *Richmond*. As dependent Claim 70 includes all the limitations of Claim 66, Applicant believes that Claim 70 is allowable for at least the same reasons. Withdrawal of the rejection and allowance of the claim is respectfully requested.

The Office Action rejected Claims 60 and 70 under 35 U.S.C. § 103(a) as being unpatentable over *Pollack* in view of *Moses*. Applicant respectfully traverses the rejection. *Pollack* has been discussed and distinguished above. *Moses* does nothing to remedy the deficiencies of *Pollack*. As dependent Claim 60 includes all the limitations of claim 58, and dependent Claim 70 includes all the limitations of Claim 66, Applicant believes that Claims 60 and 70 are allowable for at least the same reasons. Withdrawal of the rejection and allowance of the claims is respectfully requested.

Conclusion

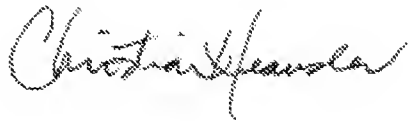
Having addressed all issues set out in the Final Office action, Applicant respectfully submits that the pending claims are now in condition for allowance. Applicant invites the Examiner to telephone the undersigned attorney if there are any issues outstanding which have not been addressed to the Examiner's satisfaction.

Since this Response is being filed within two months of the mailing date of the Final Office Action, Applicant respectfully requests that the Examiner send the Applicant an Advisory Action regarding this response.

If any fees are due with the noted amendments, the Director is hereby authorized to charge any fees associated with this filing to Deposit Account Number 11-0400 in the name of Kellogg Brown & Root LLC.

Applicant thanks the Examiner for his time and patience on this matter.

Respectfully submitted,



July 9, 2008
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